7400083

AND ELECTRICAL CONTINUES OF AN IDENTICAL

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Asgrow Seed Company

Telhereas, there has been presented to the

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART hereof, and the various requirements of ${
m LAW}$ in such cases made and provided have BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLI-CANT(S) FOR THE TERM OF Seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EX-CLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN

'Bush Blue Lake 47'

In Lestimony Withereot, I have hexeunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington

20th day of November the year of our Lord one thousand nine hundred and seventy-four

Altest

Plant Variety Protection Office

Agricultural Marketing Service

UNITED STATES DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE GRAIN DIVISION HYATTSVILLE, MARYLAND 20782 OBJECTIVE DESCRIPTION OF VARIETY

BEAN (PHALEOLUS VULGARIS)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)	FOR OFFICIAL USE ONLY
ASGROW SEED COMPANY	PVPO NUMBER
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	7400083
	VARIETY NAME OR TEMPORARY DESIGNATION BUSH BUVE
	WP-B47 LIAKE 49 RIS
Place the appropriate number that describes the varietal character of this variety in the b	
Place a zero in first box (e.g. 0 8 9 or 0 9) when number is either 99 or less or	
1. TYPE:	
	,
1 = SNAPBEAN 2 = GREEN SHELL 3 = DRY EDIBLE	4 = MULTIPURPOSE
2. SEASON AND REGION OF ADAPTABILITY IN THE U.S.:	
Grows best during: 1 = SPRING 2 = SUMMER 3 = FALL	4 = WINTER
Best adapted in: 1 = NORTHWEST 2 = NORTHCENTRAL 5 = SOUTHWEST 6 = MOST REGIONS	3 = NORTHEAST 4 = SOUTHEAST
3. MATURITY (Days from seeding to first harvest):	
7 4 GREEN PODS GREEN SHELLS	DRY SEEDS
NO. DAYS EARLIER THAN 1) 1 = TENDERCROP	2 = KENTUCKY WONDER 3 = KINGHORN WAX
4 = WHITE KIDNEY	5 = MICHELITE 62 6 = DWARF HORTI CULTURAL
0 5 NO. DAYS LATER THAN 1) 7 = BUSH BLUE LAKE	8 = OTHER (Specify)
4. PLANT:	
1 = DETERMINATE, ERECT BUSH 2 = DETERMIN 3 = DETERMINATE, SEMIPOLE 4 = INDETERM	ATE, SPRAWLING BUSH INATE, POLE
0 5 8 CM HEIGHT OR CENGTH OF VINE FROM PRIMARY LEAF NODE	
CM. HEIGHT OR LENGTH OF VINE FROM PRIMARY LEAF NODE	
0 0 5 NUMBER PRIMARY BRANCHES PER MAIN STALK	5 6 CM. SPREAD
Branching habit: 1 = COMPACT 2 = OPEN	0 5 BETWEEN PRIMARY LEAF AND BASE OF
	TERMINAL INFLORESCENCE
CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF	0 8 MM. STALK DIAMETER ABOVE
2 Main stalk: 1 = BRITTLE 2 = WIREY / 1. STOUT 2. THIN	
2 Flower position:	
2 Pod Position: 2 = HIGH, CONC	ENTRATED 3 = SCATTERED
5. LEAVES:	
2 1 = SMOOTH 2 = WRINK'-ID 1 = DULL 2 = GLOSSY	Thickness: 1 = THIN 2 = MEDIUM 3 = THICK
3 Size: 1 = SMALL (Barliwex) 2 = MEDIUM 3 = LARGE (Tendercrop)	II CM. PETIOLE LENGTH (To basel leaflets of first trifoliate leaf)
2 Tip shape of center leaflet: 1 = ROUNDED = TAPER POINTED	3 = SHARP POINTED
2 PUBESCENCE - Dorsal:)	
1 = NONE 2 = SLIGHT	3 = CONSIDER ABLE
2 PUBESCENCE · Ventral:	4
Color: 1 = LIGHT GREEN (Bountiful) 2 = MEDIUM GREEN 3 = DARK	GREEN (Bush Blus Lake)

1 = HILAR RING 3 = STROPHIOLE 5 = SIDES 2 = HILAR SURFACE 4 = MICROPYLE 6 = DORSAL SURFACE Secondary color location: 7 = NOT RESTRICTED TO ANY AREA 8 = COMBINATION OF LOCATIONS (Specify). Hilar ring: 1 = NOT PRESENT 2 = NARROW 3 = BUTTERFLY SHAPED

Vein-like under coat pattern: 1 = ABSENT · 2 = PRESENT 9. SEED SHAPE AND SIZE:

2 = ROUND 1 = OVAL 1 3 Hilum view: 1 = ELLIPTICAL 2 = OVAL 3 = ROUND Side view: 3 = KIDNEY 4 = TRUNÇATE ENDS

2 = OVAL I = ELLIPTICAL GM. WEIGHT PER 100 SEEDS Cross section: 3 = CORDATE 4 = ROUND

Classification: 1 = PEA 2 = MEDIUM 5 = PINTO 3 = MARROW 4 = KIDNEY

5

0 MM. WIDTH (Doracl to ventral) MM. THICKNESS (Side to side)

WIDTH 0 1 0 X 10 MM. LENGTH THICKNESS

	DIGHT 2002 AME 1. A 14000
FORM GR-470-12 (PAGE 3 OF 3 PAGES)	KJ S
10. ANTHOCYANIN: (1 = Absent 2 = Present):	
1 FLOWERS 1 STEMS	PODS 1 SEEDS 1 LEAVES
11. DISEASE RESISTANCE (0 = Not tested; 1 = Susceptible;	2 = Resistant):
0 RUST (Specify race)	O ANGULAR LEAF SPOT
0 BACTERIAL WILT	2 COMMON BEAN MOSAIC
0 ANTHRACNOSE	O YELLOW BEAN MOSAIC
0 SOUTHERN BEAN MOSAIC	0 FUSARIUM ROOT ROT
0 CURLY TOP	N.Y. 15 BEAN MOSAIC
0 POWDERY MILDEW	0 BEAN MOSAIC VIRUS 4
0 HALO BLIGHT	0 FUSCOUS BLIGHT
0 ALFALFA MOSAIC VIRUS	0 ALFALFA MOSAIC VIRUS 2
O POD MOTTLE VIRUS	0 RED NODE VIRUS
0 ROOT KNOT NEMATODE	O OTHER (Specify)
12. INSECT RESISTANCE: (0 = Not tested; 1 = Susceptible; 2	= Resistant)
0 APHIDS	0 LEAF HOPPERS
O POD BORER.	0 LYGUS
0 THRIPS	- WEARING

REFERENCES: The following publications may be used as a reference in completing this form:

0 DROUGHT

- Beans of New York. Vol. 1 Part II of Vegetables of New York. U.P. Hedrick et al. J. B. Lyon Company, Albany, N.Y. 1931.
- 2. Yarnell, S. H., Cytogenetics of the Vegetable Crops IV. Legumes. Bot. Rev. 31:247 330. 1965.
- 3. USDA Yearbook of Agriculture. 1937.

13. PHYSIOLOGICAL RESISTANCE: (0 = Not tested; 1 = Susceptible; 2 = Resistant)

COLOR: Nickerson's or any recognized color fan may be used to determine the colors.

OTHER (Specify).

EXHIBIT A

BUSH BLOE LAKE 47 RAS.

ORIGIN	AND	BREEDING	HISTORY	\mathbf{OF}	XP-B47

AMENDED

Application #7400083

1962	Original cross Roundup X BBL 274				
1963	F ₁ grown in field. F ₂ grown in greenhouse in fall.				
1964	F_3 was grown and single vine selections were made.				
1965	\mathbf{F}_4 was grown and single vine selections were made.				
1966	\mathbf{F}_{5} was grown and single vine selections were made.				
1967	F ₆ was grown in greenhouse F ₆ + 1 was grown and mass selected.				
1968	F ₆ + 2 grown as a small increase.				
	OBSERVATION AND YIELD TRIALS				
1969	Yield trial Increase and mass selection				
1970	Yield trial Increase and mass selection				
1971	Yield trials and increase				
1972	Designated XP-B47				

1972 & 1973 Yield trials within Company
Trials outside of Company
Increase

This variety appears to be very stable but does have the normal mutations to flat and stringy pods. These two mutations probably occur in all round podded, stringless varieties.

UNITED STATES DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE GRAIN DIVISION HYATTSVILLE, MARYLAND 20782

FORM APPROVED OMB NO. 40-R3712

(DATE)

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.	2. KIND NAME		EOD OFFIC	CIAL USE ONLY
1. VARIETY NAME OR TEMPORARY DESIGNATION BUSH BUFF	2. KIND NAME		PV NUMBER	
XE-BAT LAKE 47 RIS			74	100083
3. GENUS AND SPECIES NAME	4. FAMILY NAME (Bo		FILING DATE	TIME 8 A.M.
Phaseólus vulgaris	Leguminosae		FEE RECEIVED	BALANCE DUE
	5. DATE OF DETERM	MINATION	\$ 250	- \$
	1971		250	- \$
6. NAME OF APPLICANT(S)	7. ADDRESS (Street as	and No. or R.F.D. No.,	City, State, and ZIP	8. TELEPHONE AREA
	Code)			CODE AND NUMBER
Asgrow Seed Company	Kalamazoo,	Michigan 4900)1	(616) 382-4000
9. IF THE NAMED APPLICANT IS NOT A PER	SON, FORM OF	10. STATE OF INCO	RPORATION	11. DATE OF INCOR- PORATION
ORGANIZATION: (Corporation, partnership, a	association, etc.)	Dele		22 March, 1968
Corporation 12. Name and mailing address of applications		Delaware	in this andie	
X 13B. Exhibit B, Botanical Descr X 13C. Exhibit C, Objective Descr X 13D. Exhibit D, Data Indicative	ription of the Varie			
X 13E. Exhibit E, Statement of the				
14A. Does the applicant(s) specify that (See Section 83(a), (If "Yes," an:	seed of this variet	ty be sold by variet below.)	TAE2 X	
14B. Does the applicant(s) specify that limited as to number of generation	t this variety be ns? YES XNO	beyond bree	o 14B, how many geeder seed?	enerations of production
The applicant declares that a viable sance of a certificate and will be reple	enished periodically	y in accordance wit	th such regulations	as may be applicable.
The undersigned applicant(s) of this uniform, and stable as required in Se Plant Variety Protection Act.	s sexually-reproduc	ed novel plant vari	ety believes that th	be variety is distinct,
Applicant is informed that false repr	resentation herein c	can jeopardize prote	ection and result in	ı penalties.
ı				
A. Marie 1		A.)D	
april 8, 1974	_	al	les Trelles SIGNATURE OF APPL	ICANT)
april 8, 1974 (DATE)	_	al	les / selles ISIGNATURE OF APPL	ICANT)

EXHIBIT B

BOTANICAL DESCRIPTION OF HP-B47 BUSH BAVE LAKE 47

XP-B47 represents what we consider to be a new type of bean. Bush Blue Lake varieties have been developed with Blue Lake Pod quality but the plant type has been generally floppy. No Bush Blue Lake on the market today, to our knowledge, combines the plant type, pod setting ability and other good characters of Tendercrop type beans with Blue Lake pod quality. XP-B47 has an excellent Tendercrop type plant along with a Blue Lake pod.

XP-B47 is a late bean in that it takes about 5 days longer to reach processing maturity at Twin Falls, Idaho, than Tendercrop. The plant is larger than most other bush varieties but is very erect, but may go down if heavily loaded with pods and then subjected to a wind driven rain. The branching habit is very compact and upright until heavily loaded with pods. The main stalk of the plant is very stout and seldom breaks. The pods are generally borne high in the plant and at Twin Falls they seldom touch the ground. The plant type coupled with the pod position is probably responsible for reports that the variety is well adapted to mechanical harvest. The plant type is entirely different from the floppy habit of Bush Blue Lake 274 and other Blue Lake varieties.

The leaves of XP-B47 are similar to Tendercrop leaves rather than the Bush Blue Lake. The leaves are only medium green in color and are borne more erect to give much less sprawl than is normal for Bush Blue Lakes. The flowers are white.

The pods are basically Blue Lake in texture, flavor and processed quality. The smoothness, straightness and some other visible characters are somewhat similar to Tendercrop type beans. The pods are dark green in color, fairly long and very nearly round in the large sieve sizes rather than creaseback. The pods are smooth, nearly straight, stringless and develop seed and fiber very slowly. The seed is white and kidney shaped. There is no anthocyanin in flowers, seeds, pods or plants.

XP-B47 is resistant to common bean mosaic, and N. Y 15 mosaic, but has not been tested for resistance to other diseases.

XP-B47 has not been specifically tested for resistance to heat, drouth, etc., but it has been tested in yield trials, etc., in all sections of the United States, and also in Europe. It has been proven to be very widely adapted and sets a good crop under a wide range of conditions. This is in direct contrast to the narrow range of adaptability found in most Bush Blue Lake varieties.

NOTE: XP-B47 IS THE TEMPORARY DESIGNATION FOR BUSH BUSH BAKE 47' RYS

EXHIBIT D

PROOF OF NOVELTY

BOSH BUVE LAKE 47

RIS -XP-B47 is a new type of bean which has a Tendercrop type vine and a Blue Lake pod. As such it resembles Tendercrop varieties in some respects and Bush Blue Lake varieties in other respects. At the same time XP-B47 differs from both types. Bush Bive LAKE 47 CHECKMATE

The plant type of XP-B47 most nearly resembles XP-B46 but differs in the following respects:

- 1. XP-B47 has a Blue Lake pod whereas XP-B46 has a Tendercrop pod. This has been determined by taste test, observation, etc., by Asgrow personell, USDA, bean breeders and processors. A shake test was conducted to compare XP-B47 with BBL 274 and XP-B47 was as resistant to steam table conditions as BBL 274.
- 2. XP-B47 pods are more nearly perfectly round and also longer than those of XP-B46. Data collected from periodic harvests at Twin Falls, Idaho, in 1972 and 1973 are given below. Each figure in the table is the average of 10 pods.

	Pod Length	in mm	Width	
Harvest	of 5 Sieve	Pods	Thickness	Index
Bate	XP-B-46	XP-B47	XP-B46	XP-B47
8/2/72	136	144	.95	.97
8/4/72	142	153	.91	.98
8/7/72	142	149	.86	.93
8/9/72	<u>150</u>	<u>146</u>	<u>.89</u>	.92
Average	142	148	.90	.95
8/11/73	142	149	.98	.97
8/13/73	138	147	. 94	.95
8/15/73	137	147	.92	.97
8/17/73	134	144	.90	.99
8/20/73	147	141	.89	. 93
8/22/73	<u>138</u>	141	<u>.91</u>	<u>.92</u>
Averag e	139	145	.92	.96
Two yr Average	141	146	.91	.95

XP-B47 resembles Bush Blue Lake varieties in pod type in some respects. Probably XP-B47 resembles BBL 274 closer than any other Bush Blue Lake variety but the varieties are radically different as follows:

- 1. Bush Blue Lake has a very floppy bush as compared to XP-B47. The plant types are entirely different. Numerical data on plant sprawl are not available but the differences are very great and recognized by anyone who has seen a comparison.
- 2. Bush Blue Lake 274 at Twin Falls, Idaho, was one day earlier in 1972 and four days earlier in 1973.
- 3. Bush Blue Lake 274 is more creaseback and larger sieve than XP-B47. Following are data collected at Twin Falls, Idaho. 7

Harvest Date		% 5 Sieve & Over		Width Thick.	Index
BUSH BLUE MA	KE 47 R\$S BBL 274	<u>xp-847</u>	BBL 274	<u>xp-847</u>	BBL 274
8/2/72 8/4/72 8/7/72 8/9/72	8/1/72 8/3/72 8/5/72 8/7/72 8/9/72	19 30 49 57	52 61 81 82 89	.97 .98 .93 .92	.95 .93 .88 .89
Average	e	3 9	73	. 95	.89
8/11/73 8/13/73 8/15/73 8/17/73 8/20/73 8/22/73	8/7/73 8/9/73 8/11/73 8/13/73 8/15/73 8/17/73	29 34 51 55 72 82	42 64 62 70 79 <u>86</u>	.97 .95 .97 .99 .93	.91 .90 .88 .91 .93
Average	e	54	67	.96	.90
Two Yr. Ave	rage	48	70	.95	.90

NOTE: XP-B47 WAS THE TEMPORARY DESIGNATION FOR BUSH BLUE LIAKE 47' RYS

XP-B46 WAS THE TEMPORARY DESIGNATION FUR.

CHECKMATE!

8

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and \$250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, 6525 Belcrest Road, Hyattsville, Maryland 20782. (See Section 180.175 of the regulations and rules of practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 Insert the date the applicant determined that he had a new variety based on the definition in Section 41 (a) of the Act and decision is made to increase the seed.
- 13a First, give the centealogy, including public and commercial varieties 1 pes of clones used, and the breeding method. Second, reverthe details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how there was a period of the content of the conten
- 13b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.
- 13c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.
- 13d Provide complete data indicative of novelty. Seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty may be submitted. Seeds submitted may be sterile.
- 13e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

 $\mathbb{T}_{2}^{(n)}(1,2^{n},\mathbb{T}_{2}^{(n)}) \to \mathbb{R}^{n+1}$

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Bean RE BAT BUSH BAVE LIAKE 47

Bean XP B47 was originated by Dr. W. Pierce and was reselected and further developed by Dr. C. G. Briggs and Dr. John Atkin. All three were Asgrow plant breeders. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the company. No rights to such invention, discovery, or development are retained by the employee.